

IN THE CLAIMS:

Please substitute the following claims for the same-numbered claims in the application:

1. (Currently Amended) An autonomously self-monitoring and self-correcting integrated circuit device comprising:

a self-testing controller ~~adapted to that~~ periodically and autonomously performs on-chip performance self-testing of said integrated circuit device, ~~wherein said performance self-testing comprises~~ comprising autonomous application of functional test sequences to said integrated circuit device until failure;

a comparator ~~adapted to that~~ evaluates whether results from said self-testing are within acceptable limits; and

a processor ~~adapted to that~~ autonomously adjusts parameters of said integrated circuit device until said results from said self-testing are within said acceptable limits.

2. (Currently Amended) The integrated circuit in claim 1, ~~all the limitations of which are incorporated herein by reference, wherein said performance self-testing comprises further comprising~~ one or more of a built-in self test (BIST) unit and a functional testing unit.

3. (Currently Amended) The integrated circuit in claim 2, ~~all the limitations of which are incorporated herein by reference, wherein~~ said functional testing unit applies is ~~adapted to apply~~ said functional test sequences to said integrated circuit device until failure, and said comparator compares the failure frequency against predetermined limits.

4. (Currently Amended) The integrated circuit in claim 1, ~~all the limitations of which are incorporated herein by reference, wherein~~ said processor further adjusts said parameters by altering the voltage supplied to portions of said integrated circuit device.

5. (Currently Amended) The integrated circuit in claim 1, ~~all the limitations of which are incorporated herein by reference, further comprising electronic fuses, wherein~~ said processor is ~~adapted to~~ further activates said electronic fuses to permanently change said parameters of said integrated circuit device.

6. (Currently Amended) The integrated circuit in claim 1, ~~all the limitations of which are incorporated herein by reference, wherein~~ said processor further adjusts said parameters by permanently altering the voltage produced by voltage regulators.

7. (Currently Amended) The integrated circuit in claim 1, ~~all the limitations of which are incorporated herein by reference~~ further comprising a permanent storage device ~~adapted to~~ that maintains a history of adjustments made to said parameters by said processor.

8. (Currently Amended) An autonomously self-monitoring and self-correcting integrated circuit device comprising:

a self-testing controller ~~adapted to that~~ periodically performs on-chip performance self-testing of said integrated circuit device throughout the useful life of said integrated circuit device, ~~wherein~~ said performance self-testing ~~comprises~~ comprising application of functional test sequences to said integrated circuit device until failure;

a comparator ~~adapted to that~~ evaluates whether results from said self-testing are within acceptable limits; and

a processor ~~adapted to that~~ permanently self-adjusts parameters of said integrated circuit device by altering the voltage supplied to portions of said integrated circuit device until said results from said self-testing are within said acceptable limits.

9. (Currently Amended) The integrated circuit in claim 8, ~~all the limitations of which are incorporated herein by reference, wherein said performance self-testing comprises~~ further comprising one or more of a built-in self test (BIST) unit and a functional testing unit.

10. (Currently Amended) The integrated circuit in claim 9, ~~all the limitations of which are incorporated herein by reference, wherein said functional testing unit is adapted to apply~~ applies said functional test sequences to said integrated circuit device

until failure, and said comparator compares the failure frequency against predetermined limits.

11. (Cancelled).

12. (Currently Amended) The integrated circuit in claim 8, ~~all the limitations of which are incorporated herein by reference,~~ further comprising electronic fuses, ~~wherein~~ said processor further ~~is adapted to~~ activates said electronic fuses to permanently change said parameters of said integrated circuit device.

13. ((Currently Amended) The integrated circuit in claim 8, ~~all the limitations of which are incorporated herein by reference,~~ wherein said processor further adjusts said parameters by permanently altering the voltage produced by voltage regulators.

14. (Currently Amended) The integrated circuit in claim 8, ~~all the limitations of which are incorporated herein by reference,~~ further comprising a permanent storage device ~~adapted to~~ that maintains a history of adjustments made to said parameters by said processor.

15. (Currently Amended) A method of continuously and autonomously self-monitoring and self-adjusting the operation of an integrated circuit device, said method comprising:

periodically performing, by said integrated circuit device, on-chip performance self-testing of said integrated circuit device,

~~wherein~~ said integrated circuit device comprises a product to be tested and

~~wherein~~ said performing of said performance self-testing comprises applying functional test sequences to said integrated circuit device until failure;

self-evaluating, by said integrated circuit device, whether results from said self-testing are within acceptable limits; and

self-adjusting, by said integrated circuit device, parameters of said integrated circuit device until said results from said self-testing are within said acceptable limits.

16. (Currently Amended) The method in claim 15, ~~all the limitations of which are incorporated herein by reference, wherein~~ said performance testing comprising ~~comprises~~ one of built-in self testing (BIST) and functional testing tests.

17. (Currently Amended) The method in claim 16, ~~all the limitations of which are incorporated herein by reference, wherein~~ said functional testing comprising tests ~~comprise~~ looping through functional test sequences until failure, and said evaluating of said results compares the failure frequency against predetermined limits.

18. (Currently Amended) The method in claim 15, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of adjusting said parameters comprises altering the voltage supplied to portions of said integrated circuit device.

19. (Currently Amended) The method in claim 15, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of adjusting said parameters comprises activating electronic fuses to permanently change said parameters of said integrated circuit device.

20. (Currently Amended) The method in claim 15, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of adjusting said parameters comprises permanently altering the voltage produced by voltage regulators.

21. (Previously Presented) The method in claim 15, further comprising maintaining a history of adjustments made to said parameters during said adjusting process.

22. (Currently Amended) A method of continuously and autonomously self-monitoring and self-adjusting the operation of an integrated circuit device throughout the useful life of said integrated circuit device, said method comprising:

periodically performing, by said integrated circuit device, on-chip performance self-testing of said integrated circuit device throughout said useful life of said integrated circuit device,

~~wherein~~ said integrated circuit device comprises a product to be tested and

~~wherein~~ said performing of said performance self-testing comprises applying functional test sequences to said integrated circuit device until failure;

self-evaluating, by said integrated circuit device, whether results from said self-testing are within acceptable limits; and

permanently self-adjusting, by said integrated circuit device, parameters of said integrated circuit device by altering the voltage supplied to portions of said integrated circuit device until said results from said self-testing are within said acceptable limits.

23. (Currently Amended) The method in claim 22, ~~all the limitations of which are incorporated herein by reference, wherein~~ said performance self-testing comprising ~~comprises~~ one of built-in self testing (BIST) and functional testing tests.

24. (Currently Amended) The method in claim 23, ~~all the limitations of which are incorporated herein by reference, wherein~~ said functional testing comprising tests ~~comprise~~ looping through functional test sequences until failure, and said evaluating of said results compares the failure frequency against predetermined limits.

25. (Currently Amended) The method in claim 22, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of self-adjusting said parameters comprises altering the voltage supplied to portions of said integrated circuit device.

26. (Currently Amended) The method in claim 22, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of self-adjusting said parameters

comprises activating electronic fuses to permanently change said parameters of said integrated circuit device.

27. (Currently Amended) The method in claim 22, ~~all the limitations of which are incorporated herein by reference, wherein~~ said process of self-adjusting said parameters comprises permanently altering the voltage produced by voltage regulators.

28. (Currently Amended) The method in claim 22 ~~all the limitations of which are incorporated herein by reference,~~ further comprising maintaining a history of adjustments made to said parameters during said self-adjusting process.